



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,641	02/07/2002	Gregory L. Verdine	H00498/70118 TJO/TC	3255

23628 7590 08/13/2003

WOLF GREENFIELD & SACKS, PC
FEDERAL RESERVE PLAZA
600 ATLANTIC AVENUE
BOSTON, MA 02210-2211

EXAMINER

MCINTOSH III, TRAVISS C

ART UNIT	PAPER NUMBER
----------	--------------

1623

DATE MAILED: 08/13/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

File Copy

Office Action Summary

Application No.

10/072,641

Applicant(s)

VERDINE ET AL.

Examiner

Traviss C McIntosh

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 8-30 and 37-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 31-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-7 and 31-36 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that applicants "...believe that a single search and examination covering all the claims would not place undue burden on the examiner". This is not found persuasive because applicants did not distinctly and specifically point out the supposed errors in the restriction requirement.

As shown by the first sentence of 37 CFR 1.143, the traverse to a requirement must be complete as required by 37 CFR 1.111(b) which reads in part: "In order to be entitled to reconsideration or further examination, the applicant or patent owner must reply to the Office action. The reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action . . . The applicant's or patent owner's reply must appear throughout to be a bona fide attempt to advance the application or the reexamination proceeding to final action. . . ." Under this rule, the applicant is required to specifically point out the reasons on which he or she bases his or her conclusions that a requirement to restrict is in error. A mere broad allegation that the requirement is in error does not comply with the requirement of 37 CFR § 1.111. Thus the required provisional election (see MPEP § 818.03(b)) becomes an election without traverse.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 and 31-36 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite wherein the structural formula set forth in the claim has dangling valences, which leaves uncertainty as to exactly what is to be encompassed by the instant claims.

Claims 1-3 are indefinite as the claims have been misrepresented as composition claims. Claim 1 is drawn to a composition comprising a singular component which is the compound set forth therein. Claims 2 and 3 both provide limitations to the compound set forth in claim 1. A composition can not be comprised of a single component, as standard representation of compositions requires at least 2 components, i.e., a compound and a carrier.

Claim 3, which depends from claim 1, is indefinite wherein the claim reads, "wherein a hydrogen atom on a base has been substituted..." The recitation of "a hydrogen atom on a base" is unclear as there is only 1 base in the structure of claim 1, and the use of "on a base" asserts there is more than one base present. Changing the claim to read, "wherein a hydrogen atom on the base has been substituted..." would be more favorably considered.

The term "electron-rich" in claim 3 is a relative term, which renders the claim indefinite. The term "electron-rich" is not defined by the claim and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. Clarity is respectfully requested.

Art Unit: 1623

Claim 4 is indefinite wherein the claim is drawn to a method of producing a composition (again, the examiner believes applicants to mean a method of producing a compound, as that is what is produced) comprising the steps of “providing a species comprising a nucleoside, and reacting the species with a compound to form a composition comprising the compound disclosed in claim 4 (and 1). It is unclear what “species” applicant intends. Does applicant intend a specific species of *Drosophilae* which comprises a nucleoside?

Claims 6 and 7 are indefinite wherein applicants claim a “deoxyuridine derivative”. In the absence of the identity of moieties intended to modify an art recognized chemical core, described structurally or by chemical name, the identity of a derivative would be difficult to ascertain. In the absence of said moieties, the claims containing the term “derivative” are not described sufficiently to distinctly point out that which applicant intends as their invention.

Claim 31 is indefinite wherein the claim is drawn to a method of synthesizing an amine comprising the steps of: reacting a compound as disclosed in claim 31 with a compound to form an amine. Applicants should draft their method claims in a manner which provides clear guidance to exactly what is entailed in the process, not a method of making an amine by reacting a nucleoside of claim 31 with compound to form an amine.

Claim 31 is indefinite wherein the claim defines R^1 and R^2 as: “at least one of R^1 and R^2 comprises a carbon atom”. Applicants should not say what at least one of the variables is, applicants should say what both of the variables are. If only 1 of R^1 or R^2 comprises a carbon atom, then the other is not defined, and all variables must be defined by the claim in which they occur.

Art Unit: 1623

Claim 32 is indefinite wherein the claim defines R^1 and R^2 as: “at least one of R^1 and R^2 comprises a fluorescent entity”. Applicants should not say what at least one of the variables is, applicants should say what both of the variables are. If only 1 of R^1 or R^2 comprises a fluorescent entity comprising a carbon atom, then the other is not defined, and all variables must be defined by the claim in which they occur.

Claim 33 is indefinite wherein the claim defines R^1 and R^2 as: “at least one of R^1 and R^2 comprises a radioactive entity”. Applicants should not say what at least one of the variables is, applicants should say what both of the variables are. If only 1 of R^1 or R^2 comprises a radioactive entity which comprises a carbon atom, then the other is not defined, and all variables must be defined by the claim in which they occur.

Claim 34 recites the limitation “the compound” in line 14 of page 27. There is insufficient antecedent basis for this limitation in the claim. As set forth supra, it appears applicants have interchanged the word “composition” with “compound” as the examiner believes applicants intend the compound as recited in line 14 to refer to the structure in line 12, which applicants call a composition.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

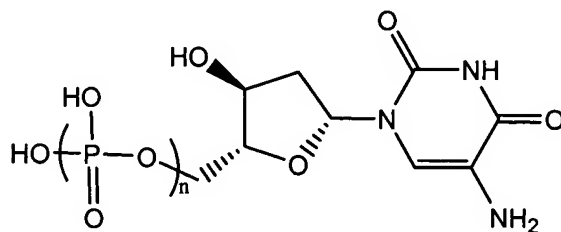
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1623

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Bahl et al. (US Patent 5,215,882).

Claim 1 is drawn to a compound represented by the structure:



wherein n is at least 2.

Bahl et al. disclose that a modified nucleotide suitable for use in the anchor portion of their sequence is 5-amino-2'-deoxyuridine-5'-triphosphate (column 3, lines 46-47). This compound is identical to that as claimed by the applicants wherein there are 3 phosphate groups, that is n=3 in the instant applications compound. It is noted that the compound is actually written as 5-amino(12)-2'-deoxyuridine-5'-triphosphate, but the examiner has interpreted the "(12)" portion as a typographical error.

Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Engelhardt et al. (US Patent 5,241,060).

Claim 1 of the instant application is drawn to the compound as set forth supra. Claim 4 is drawn to a method of making the 5-amino-2'-deoxyuridine phosphate derivative comprising the steps of reacting a nucleoside with a compound to form the 5-amino-2'-deoxyuridine phosphate derivative. Claim 5 limits the nucleoside reactant to deoxyuridine, and claim 6 limits the nucleoside to a deoxyuridine derivative.

Art Unit: 1623

Engelhardt et al. disclose in example XV a method of coupling biotin (a reporter molecule) to 5-amino-2'-deoxyuridine. Example XVIII teaches of methods to phosphorylate 5-substituted pyrimidine nucleosides (5-amino-2'-deoxyuridine is a 5-substituted pyrimidine). Example XIX teaches methods to prepare pyrimidine triphosphates from their respective 5' monophosphates. Thus, they inherently teach a method of making 5-amino-2'-deoxyuridine triphosphate from a deoxyuridine nucleoside derivative. It is noted that although Engelhardt et al. do not specifically disclose the compound as claimed, the process as taught is seen to be one which will produce the compound as claimed, and since the Office does not have the facilities for preparing the claimed materials and comparing them with prior art inventions, the burden is on Applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald et al.*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Determining the scope and contents of the prior art.

Art Unit: 1623

Ascertaining the differences between the prior art and the claims at issue.
Resolving the level of ordinary skill in the pertinent art.
Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt et al. (US Patent 5,241,060).

Claim 1 is drawn to the compound as set forth supra. Claim 2 provides the limitation of incorporating a radioactive atom onto the compound, and claim 3 provides the limitation that a hydrogen atom on the base has been substituted by an electron rich group.

Engelhardt et al. teach of a modified nucleotide which has a detectable moiety on the base (abstract). Specifically, Engelhardt teaches of 5-amino-2'-deoxyuridine biotin-labeled complexes and that it is known to produce nucleotides which are radioactively labeled to produce compounds which are useful to detect, monitor, localize, and isolate nucleic acids and other molecules of scientific or clinical interest (column 1, lines 14-20). What Engelhardt et al. does not teach is the specific 5-amino-2'-deoxyuridine phosphate as labeled with radioactive groups or to use electron-rich groups.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate other labels into the 5-amino-2'-deoxyuridine complex, as this is standard practice in the art. Various labels are known to be used for various purposes, and in divergent situations, divergent labels are sometimes used. It is noted that just because the preferred embodiment of Engelhardt et al. is biotin labels, that does not render unobvious the portion of the reference which teaches of the other labels, such as the radioactive labels set forth in column 1, lines 14-25.

Art Unit: 1623

Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt et al. as applied to claims 1-3 above.

Claims 34-36 of the instant application are drawn to a method of producing a compound comprising coupling a reporting group (a radioactive or fluorescent group) to a 5-amino-2'-deoxyuridine phosphate compound.

Engelhardt et al. teach to attach a reporting group to the non-phosphate 5-amino-2'-deoxyuridine molecule, then to phosphorylate the complex. However, it has been held that merely reversing the order of steps in a multi-step process is not a patentable modification absent unexpected or unobvious results. See *Ex Parte Rubin*, 128 USPQ 440 (POBA 1959).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Traviss McIntosh whose telephone number is 703-308-9479. The examiner can normally be reached on M-F 8:30-5:00.

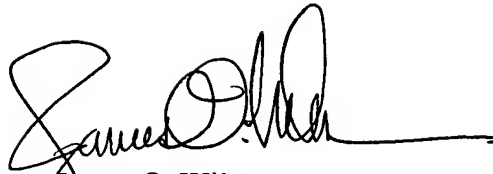
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 703-308-4624. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Application/Control Number: 10/072,641
Art Unit: 1623

Page 10

Traviss C. McIntosh
August 8, 2003



James O. Wilson
Supervisory Patent Examiner
Art Unit 1623